

	Ann. Par.
The first seven observations were made near opposition, the next eight near conjunction.....	The comparison of these gave a result of 2.18
The next set were seven at opposition, and eight at conjunction	
The last set eight at opposition, and eight at conjunction	giving 3.06
	gave 2.32
	3) 7.56

So that by the result of 47 observations, the result is 2".52; and Dr. Brinkley adds, that from the confidence which he has now acquired in his instrument, he has no doubt that the annual parallax exceeds 2".

This letter also contains some remarks upon refraction with the co-latitude of the Dublin Observatory, as deduced by means of different formulæ. From these it appears, that the agreement by Delambre's tables is nearer than by Dr. Bradley's own formula; but that Dr. Bradley's formula, by means of a slight correction, gives a table preferable to that of Delambre.

Dr. Bradley's is

$$56''.9 \times \text{tang. (zen. dist. - 3 Refr.)} \frac{\text{ht. barom.}}{29.6} \times \frac{400}{350 + 6}$$

Dr. Brinkley's corrected formula

$$56.9 \times \text{tang. (zen. dist. - 3.2 Refr.)} \times \frac{\text{ht. barom.}}{29.6} + \frac{500}{450 + 6}$$

On the Mode of breeding of the Ovo-viviparous Shark, and on the Aëration of the fatal Blood in different Classes of Animals. By Everard Home, Esq. F.R.S. Read June 7, 1810. [*Phil. Trans.* 1810, p. 205.]

With a view to understanding more fully the structure of the *Squalus maximus*, of which Mr. Home has lately published an account, he has examined with attention that of the *Squalus acanthius*, which appears to resemble it closely in its internal structure, and has the advantage of being very easily obtained upon the Sussex coast, where it is very common.

After describing minutely the external organs of generation in both male and female, the author traces the progress of the ovaria from the time that the yolks are no larger than peas, till they become as large as walnuts, when they pass into the oviduct. The number of yolks differs in different fish; and even in the same fish Mr. H. has seen five yolks in one ovarium and only two in the other. The oviducts then enlarge, and become exceedingly extended, and divided by contraction of its coats into three cavities, the last of which is ten inches in length, and is that in which the eggs are retained till the young fishes are formed, and capable of taking care of themselves.

The eggs, however, are not loose as in the oviducts of birds, but are grouped together to the number of three, four, or five, in membranous bags, containing a transparent jelly, in which the young fish swims about after it is formed, with the yolk attached to its belly by a long chord, consisting of blood-vessels. If the bag be torn and the fish taken out and put into water with its yolk attached to it, it swims about; but if the vessels of the chord are wounded, it dies immediately.

The author is of opinion that many of the shark tribe have this mode of hatching; but with respect to the large shark between the tropics, the fact has been already observed by Dr. Patrick Russell, who in one instance found twenty-one young ones in the right oviduct, and twenty in the left.

The gelatinous liquor surrounding the ova being found to differ in its properties from their animal jellies, excepting that with which the ova of frogs are surrounded, Mr. H. procured some frogs that he might watch the formation of their jelly, and examine its properties. No change was observed to take place in their ovaria through the winter, but on the 10th of February when a portion of oviduct was immersed in water at 80° , it swelled to double its size, and even larger when the water was warmer. On the 25th of February a portion of oviduct, only two or three inches long, being put into water at 120° , swelled to such a mass of transparent jelly as filled a half pint tumbler. This substance resembled what is occasionally found on the ground, and on the branches of trees, and is called star-shot jelly; which by Pennant has been supposed to be brought into that state in the stomachs of herons and of other birds that feed on frogs, and then rejected by vomiting.

Mr. Brande was consequently requested to make a comparative examination of the jelly from the shark, of the jelly obtained from the oviducts of frogs, and of star-shot jelly, procured from Lincolnshire; and he found them to agree perfectly in their properties.

When dried they become brittle, but when put into water, they expand again to their original bulk, even although the heat of boiling water has been applied for drying them. Water does not appear to dissolve any portion of them even by boiling; they dissolve, however, by acids or by alkalies. As none of the solutions are precipitated by tannin, the substance distinctly differs from gelatin; and as it is not coagulated by heat, by acids, by alcohol, or by electricity, it differs equally from albumen, and must be considered as of a peculiar nature not yet described.

The subsequent part of Mr. Home's communication relates to the provisions for supplying the fœtus of different animals with air.

The ova of many fish are laid as near the sources of rivers as they can be, for the sake of the greater proportion of air contained in the water. Others are attached to plants which assist in supplying them with oxygen. The ova of sharks and of skates, which have their coats too strong to be penetrated by sea-water, have apertures at each end for its admission and escape.

In the ovo-viviparous sharks, which are the subjects of the present communication, the ova being contained till hatched in the body of the fish, have no hard covering, and are surrounded by sea-water, which has admission into the oviduct, by an aperture for that purpose.

In the kangaroo, and others of the opossum tribe in New South Wales, there is a communication between the uterus and vagina, which answers the same purpose of aërating the foetal blood, which is necessary in these animals; because the young is not, as in others, connected with the uterus by a navel-string, but is detached as a sort of soft egg, and consequently cannot receive the influence of the arterial blood of the mother through the coats of any contiguous vessels.

On Cystic Oxide, a new species of Urinary Calculus. By William Hyde Wollaston, M.D. Sec. R.S. Read July 5, 1810. [Phil. Trans. 1810, p. 223.]

The calculus, which is the subject of the present essay, is the only new species which the author has had an opportunity of observing, in addition to five which he described to the Society in the year 1797.

It appears to be comparatively very rare, as he has hitherto seen only two specimens of it; one in the possession of Dr. Reeve of Norwich, and the other in a collection of calculi belonging to Guy's Hospital. They are in appearance more like the triple phosphate of magnesia than any other calculus, but are more compact and semi-transparent, with a slight tinge of yellow.

By destructive distillation they yield foetid carbonate of ammonia, with a heavy animal oil, and the residuum is a black spongy coal.

They are not dissolved by water, by alcohol, by acetic acid, by tartaric acid, but are dissolved by most other acids, by muriatic, nitric, sulphuric, phosphoric or oxalic acids.

They are dissolved also by most alkaline menstrua, as by solutions of pure potash or soda, pure ammonia, or by lime-water, and even by the fully saturated carbonates of potash or of soda, but not by carbonate of ammonia.

It is remarked also, that the solution formed with nitric acid does not yield oxalic acid, as the uric acid does when similarly treated, and does not turn red in drying, but becomes brown, and ultimately black, when much heated.

Since this substance yields carbonate of ammonia by distillation, it evidently contains oxygen, but it does not appear acid, as it does not redden litmus, but has rather the properties of an oxide, inasmuch as it unites readily with either acid or alkaline substances; and the author is induced to give it the name of cystic oxide, because the only calculi hitherto observed have been taken from the bladder.

The author takes this opportunity of correcting an inaccuracy or two in his former communication on this subject; and he also adds